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Hedge Accounting as a Strategic Tool inFinancial Risk Management: A Review

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Abstract
This paper examines the financial risks faced by businesses by determining the meaning of risk and types, and investigates the management of financial risk in the light of hedge accounting techniques. Thus, this paper investigates hedge accounting and its role in the protection from and hedging of risks to which businesses are exposed. This necessitates a departure from today's largely transactions-based model, which generally does not measure assets or liabilities at fair value and recognizes the effects of price changes only on disposition or settlement. The paper examines how the use of hedge accounting can help to achieve efficient management of financial risk in businesses. The paper attempts to answer four research questions: 1. What is the structure of enterprise risk types and purposes? 2. How does one choose the appropriate strategy for the management of financial risk? 3. Why hedge? 4. What is the objective of focusing on the operations of hedge accounting? The primary findings are that the use of hedge derivative instruments can have significant effects on other corporate decisions, such as the level and maturity of debt, dividend policy, holdings of liquid assets, and the extent to which hedging is utilized. Finally, the hedge accounting strategy should be designed to balance the economic effectiveness of the hedge with the cost of the hedge.
Keywords:risk management, enterprise risks, financial instruments, hedge accounting

1. Introduction

The business world is now characterized by many risks, which have become characteristic of economies in all countries of the world, and the success or failure of businesses depends upon the extent of their ability to avoid those risks by management. Thus, it is necessary to find appropriate means by which risk management, including financial risk, can be eliminated or managed. The popular theories of financial risk management indicate that corporations may use derivatives to lower the expected costs of financial distress and the tax paid by the corporation (Fiechter, 2011; Gould, Szimayer, 2009; Lin, Phillips, Smith, 2008; Panaretou, Shackleton, Taylor, 2013; Purnanandam, 2008), to coordinate cash flows with investment policy, or to reduce agency conflicts between managers and owners (Adhikari, Betancourt, 2008; Bartram, 2008; Berk, Peterlin, 2009; Fehle, Tsyplakov, 2005; Liebenberg, Hoyt, 2003; Tufano, 1998). Hedge accounting is one of the means by which businesses manage financial risk, allowing businesses to reduce the frequencies of financial risk. This paper seeks to discuss the management of financial risk in the light of hedge-accounting techniques.

The many and varied means of hedge accounting enable corporates to manage their risks in optimal ways. Any business tries to achieve the maximum possible return on the one hand, and reduce risk to the maximum extent possible on the other hand. In addition, businesses try to 'window dress' their financial statements, hiding their financial obligations whilst avoiding infringement of or conflict with generally accepted accounting principles. Thus, they seek to remain within the bounds of legality, yet still keep their corresponding obligations to creditors or investors or the government, etc. out of the light (Bartram, 2008). Risk management is an activity about which a consensus has recently been reached regarding its benefits for investors and other interest groups (Berk, Peterlin, 2009).

2. Structure of Enterprise Risk Types and Purposes

As there are many types of risk to which businesses are exposed, it is necessary here to identify some of the terminology with respect to risk management, thus addressing the confusion between risk management and risk. The management of financial risk refers to the decisions taken by and activities of management beginning before any crisis and the intensification of danger, the goal being to prevent the occurrence of danger. Businesses face three types of risk: the first is risk that can be disposed of; the second is risk that can be transferred to other parties; finally, there are risks that can be managed by the enterprise itself. In relation to the first type, businesses avoid particular risks through their practical experience and ability to recognize sources of risk (Kimber, 2004; Tufano, 1998). The second type of risk can be reduced or eliminated by disposing of them through converting or selling them on the private markets equipped for this purpose. This process includes methods of risk transfer that use certain financial instruments for protection, as well as certain hedge-accounting techniques (Purnanandam,

2008; Saunders, Cornett, McGraw, Anne, 2006). The latter type of risk comprises those that cannot be disposed of until conversion and should be borne by the enterprise because of the difficulty of separating the risk itself from its origin.

Therefore, the risks faced by businesses are classified according to three dimensions: source of risk, link to the business, and informatics of competitive advantage. The literature that focuses on the subject of financial risk management states that contemporary facilities face a variety of financial risks in different functional areas. According to theories of modern finance (the division of risk of the enterprise), there are two sets of risks; systemic risks and irregular risks. A third dimension divides the risks facing an enterprise into two categories according to the competitive advantage of the information available (Berk, Peterlin, 2009; Bessis, 2011; D'Arcy, Brogan, 2001; Doherty, 2000; Schrand, Unal, 1998) as shown in Table 1.

Table 1 Types of corporate risk

Main type	Sub-type	Definition
Source of risk	Business risk	Associated with industry and the primary domain in which the enterprise operates
	Operational risk	Associated with the system of the internal enterprise (or individuals working with these systems)
	Administrative risk	Associated with administrative functions and practices of each department of the enterprise
	Legal risk	Arising from entering into contractual agreements with other parties and associated with uncertainty regarding fulfilling obligations to these parties
	Credit risk	Associated with the failure of the other party to fulfill the commitments it has undertaken
	Price risk	Associated with unwanted movements (up or down) in market prices, which are divided into interest-rate risk, exchange rate risk, commodity price risk, and the risk of ownership
	Fund risk	Resulting from the failure of the enterprise to meet the burdens of debt, according to terms agreed upon with the donors or lenders
	Risk of focus	Resulting from focusing investments on one sector or several small segments, also called the 'risk of non-diversification.'
	Coverage risk	Resulting from an error in coverage or the failure to achieve adequate coverage of the risks faced by the enterprise
	Political risk	Resulting from government decisions, such as taxation, pricing, customs
Link of the business	Systemic risk	'Public' risk faced by all enterprises in the market, regardless of the characteristics of the enterprise in terms of type, size, or ownership structure. Arising from variables with a public status, such as economic or political conditions, and therefore difficult to dispose of by diversification, resulting in its other name 'non-diversifiable risk' or 'market risk.'
	Irregular risk	Risk facing a particular enterprise, resulting from the characteristics and conditions of the enterprise. Such risks can be reduced or avoided through a strategy of diversification; they can also be called 'risks avoidable by diversification,' or 'unique risks' being specific to an enterprise.
Informatics of competitive advantage	Financial risk	Arising from the variables that make competitive advantage unavailable. An enterprise must apply effective strategies to manage these risks in order for them to be covered, avoided, or controlled. Because of these risks, the enterprise does not achieve any economic returns. The risks are not directly related to the primary activity of the enterprise, but are linked to the market in which it operates. They comprise: interest-rate risk, exchange rate risk, the risk of volatility in the prices of equity instruments, and commodity price risk. They call for the need to confront and manage these risks through hedging.
	Business risk	Risk that an enterprise should bear through the performance of its main activity; some of the informatics of competitive advantages should have been established for the variables that give rise to these risks, as these variables represent the basic elements of the activity of the enterprise by which cash flow is generated. In addition, the enterprise achieves economic returns because of bearing these risks.

Table prepared by the authors

Risk management seeks to achieve three main objectives: preventing losses, maximizing the degree of stability in profits, and reducing the costs of managing potential financial losses. In contrast, risk management is profitable and productive, likely to occur, and its pre-planning proves largely lucrative before crises occur (Bessis, 2011; Borge, 2001; D'Arcy, Brogan, 2001; Driga, 2012). The risk management process essentially entails examining and analyzing incomprehensive detail all types of risks to which the business may be exposed, and it is enacted by applying five basic steps (Borge, 2001; Bozzo, 1998; Grinblatt, Titman, 2002): defining the risks surrounding the enterprise; risk analysis and classification; identifying the sources of risk; risk measurement and assessment, determining the effects of each risk and the possibility of its occurrence; controlling the risk and determining appropriate ways to minimize the potential risk and its impacts; making informed decisions to avoid risks, reduce them, transfer them, or accept them; monitoring and periodic follow-up to explore new risks or the failure of former attempts at risk control.

3. Financial Risk Management Strategies

Extrapolating from the abundant financial literature focused on the topic of financial risk management, it is possible to identify three key strategies:

- ***Leave the position open:*** This is intended to keep the level of risk as it is, this strategy being effective when the low level of risk does not justify the cost expected to manage it (Miller, 1992).
- ***Adopt a calculated strategy:*** This intended to determine the levels of risk that can be carried by the facility – no enterprise wants to bear more established risks – and then take all appropriate measures to minimize the risks in the enterprise until they reach an acceptable level. Strategic policies to reduce risk include the diversification of product lines in the enterprise, change in the level of operating leverage due to the circumstances of the enterprise, and change in the amount of leverage and the use of derivative financial instruments to hedge against price risk(Doherty, 2000; Meulbroek, 2002).
- ***Adopt a strategy to cover all risk:*** This is intended to identify (determine) the sources of risk for the enterprise and any possibility of reducing the risk to zero (Cummins, Phillips, Smith, 2001; Doherty, 2000): a) through diversification – diversifying some of the enterprise's resources to different areas, rather than focusing on a single area; b) by working to address costs, thus reducing the risk arising from price movements; c) through the reduction of leverage – reducing the use of debt, and thereby the commitment to

pay interest and the principle; d) by changing the distribution of cash flows through extra-budgetary activities.

The latter strategy is one of those adopted by businesses so that they cover potential risks when engaging in business transactions, currently known as hedging or protection. To achieve this end, businesses use hedge accounting as part of their strategy to manage risk and it is thus part of the concept of risk management. It has become a common accounting method used to overcome or mitigate the risks facing businesses. This is a result of the typical approach which is based on avoiding risks to the maximum extent possible (Doherty, 2000; Miller, 1992).

4. Hedge Accounting and Tools

4.1 Hedge Accounting Objective and Tools.

The objective of hedge accounting is to recognize concurrently in income the effects of changes in market prices or rates on two or more positions (assets and liabilities), sharing exposure to a market factor that has expressly been linked. This necessitates an exception to today's largely transactions-based model which generally does not measure assets or liabilities at fair value and recognizes the effects of price changes only on disposition or settlement.

Hedge accounting forms the means through which businesses can manage financial risk to overcome the risks faced by mitigation; that is, hedge accounting is based on the idea that involvement in a sale, for example, requires engagement in the purchase. The origins of the use of hedge accounting occurred when businesses dealing in financial derivatives found that financial derivatives and non-financial (financial instruments) were an alternative means of managing financial risk and achieving a desirable position in relation to risk (Jin, Jorion, 2006). Hedge accounting is the process by which to the hedging tool – one or more – is determined so that the change in fair value would be equivalent to full or partial change in the fair value or cash flow for the provision of the hedging required.

4.2 Why Hedging?

Today, corporations are increasingly trying to manage their exposure through hedging. Hedging is the taking of a position to either acquire a cash flow or an asset or a contract (including a forward contract) that will rise (fall) in value and offset a drop (rise) in the value of an existing position (Eiteman, Stonehill, Moffett, 2007). Therefore, the main purpose of a hedge is to reduce the volatility of existing position risks caused by the exchange rate movement (smoothing effect). Figure 1 shows how the corporation's expected value E [V] in the home currency looks before and after hedging. Hedging narrows the distribution of the corporation's value around the mean of the distribution (Froot, Scharfstein, Stein, 1993; Myers, Majluf, 1984). From the figure, it is clear that unless hedging shifts the mean of the distribution to the right, it cannot increase the corporation's value, implying that hedging not only protects the purchaser against loss, but also eliminates any gain that might result from changes in exchange rates.

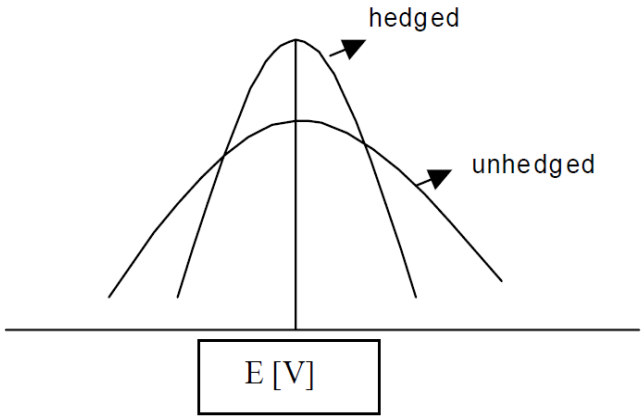

Figure 1 Hedging effect

(Charnes, Koch, Berkman, 2003) emphasized that it may be essential for businesses that use derivatives for risk management to qualify for hedge accounting treatment. Failure to qualify will have considerable tax consequences. What is more, by not hedge accounting, the match within the temporal order of financial gain recognition could induce financial gain volatility that does not accurately replicate the underlying political economy of the hedging relation. This financial gain volatility will have a considerable impact on different social control selections and written agreement obligations faced by the firm, and may influence the selection of the hedging instrument, or maybe the choice to hedge at all.

4.3 The Rationale for Hedge Accounting

The increasing use of fair value accounting in financial reporting came about because accounting standard setters have come to the conclusion that fair value appears to meet the conceptual framework criteria better than other measurement bases (for example, historical cost, amortized cost, among others) (DeMarzo, Duffie, 1995). Notwithstanding this rationale, a major issue with fair value accounting is the difficulty of measurement ('subjective estimates') when financial instruments do not trade in active markets. IAS 39 provides measurement guidance on how firms should compute fair value estimates in such a situation.

4.4 Types of Hedging Relationships

When the objective is to cover the risk of changes within the fair value of a) a recognized asset or liability, b) an unrecognized firm commitment, or c) an identified portion of such an asset, liability or firm commitment, attributable to a particular risk and effecting profit or loss, hedging could be construed as fair value hedging under IAS 39 terminology.

When the objective is to hedge the exposure to variability in cash flows related to a) a particular risk associated with a recognized asset or liability (such as all or some future interest payments on variable rate debt), or b) an extremely probable forecast transaction, which would have an effect on the income statement, this hedge could be a cash flow hedge consistent with IAS 39 terminology.

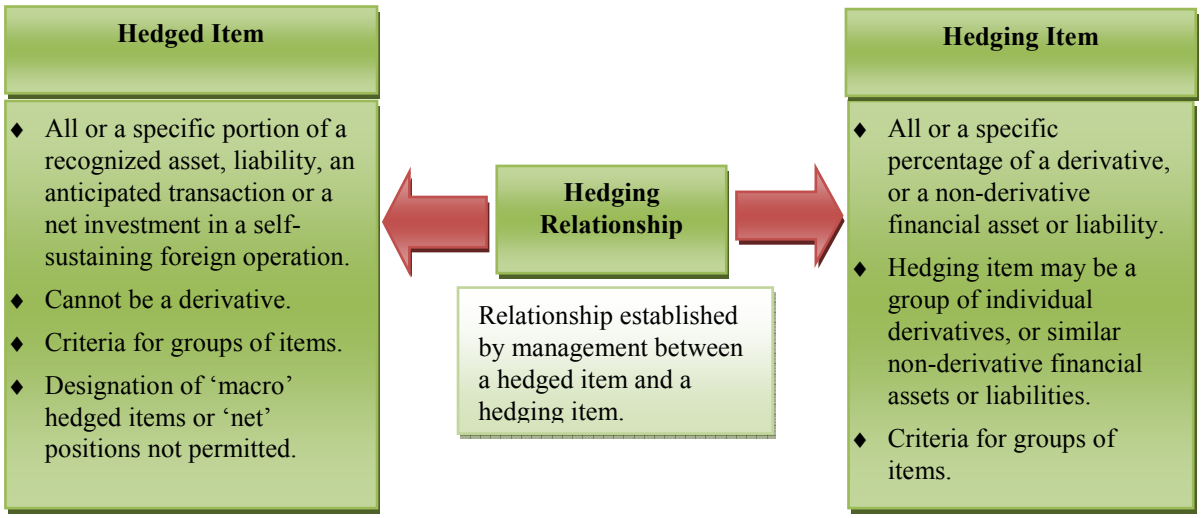

FIGURE 2 DEFINITION OF A HEDGING RELATIONSHIP

4.5 IAS for Hedge Accounting

The IASB has proposed a number of significant changes to the current IAS 39 hedge accounting requirements. The overall effect will be more opportunities to apply hedge accounting and consequently less profit or loss volatility arising from risk management activities. To date, the restrictive accounting rules have led to some companies not applying hedge accounting or, in some cases, changing their risk management approach to become eligible. Hence, the lifting of these restrictions could prompt changes in risk management and more application of hedge accounting.

International Accounting Standard No. 39 identifies concepts which focus upon hedge accounting (IASB, 2003):

- *Fair value hedging:*protection against exposure to changes in the fair value is recognized or required for a specific part of the existing risk or is attributable to a particular risk that will affect the net income reported.
- *Cash flow hedging:* hedging against exposure to changes in cash flow (1) is attributed to a particular risk associated with a recognized asset or liability (such as all or some future interest payments on variable rate debt), or a predicted risk (such as an expected purchase or sale), and which (2) will affect the net profit or cause a loss to be reported, and are held accountable as the protection of a corporate commitment is not recognized for purchase or sale at a fixed price in the currency reports of businesses that hedge cash flow, although it is exposed to risk in the fair value.
- *Hedging of the net investment in foreign currency units:* defined in IAS 21 as effects of changes in foreign exchange rates.

Accounting for derivatives as prescribed by International Financial Reporting Standards (IFRS) generated a significant debate concerning its impact on corporate risk management. On the one hand, increased information concerning corporate risk management policies – and therefore the fair value measurement of financial instruments – made the use of derivatives more transparent (Panaretou et al., 2013). This provides a more robust picture of the firm's underlying risk exposure and improves the extent to which corporate earnings are informative as a proof of management ability (DeMarzo, Duffie, 1995).

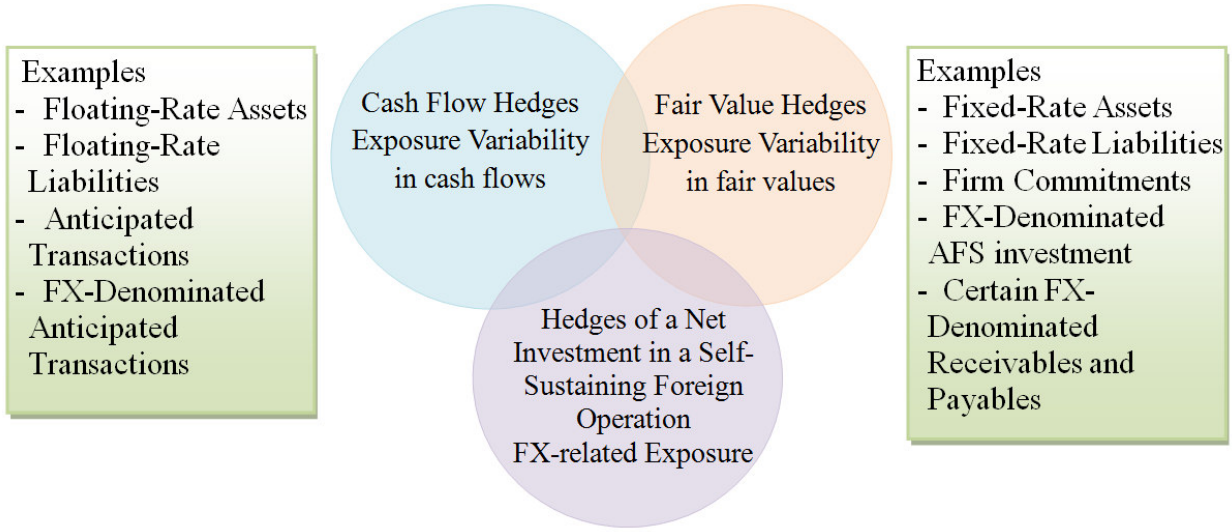

FIGURE 3 CLASSIFICATION OF A HEDGING RELATIONSHIP

4.6 Instruments of Hedge Accounting

Hedge accounting uses several tools to achieve the protection process and among these are: financial derivatives, securitization, the sale of loans, and financial leases. In order to shed light on these tools, each is addressed here in detail:

Financial Derivatives are 'financial contracts that derive their value from the implicit value and can be used for multiple purposes such as hedging, investment and speculation, and the volatility of value greater than the volatility of the value of the existing implicit then, and related items and obligations of off-balance sheet' (Bessis, 2011; Fong, Gallagher, Ng, 2005; Jin, Fang, 2005).

In fact, the derivatives are zero swaps because they result in one party losing to the other party, known in many cases as 'game zero.' So the derivatives are not exchanged in reality because there is no intention to transfer ownership of the original derivative, but only to influence the settlement of price differences at the end of the decade. The advantages of derivatives are those that generally pertain to processes of hedging, in which one of the parties to the contracting process holds better information, or has the ability to take risks against the financial return (Tufano, 1996).

There are numerous and varied forms of derivatives, which can be divided into the following types:

• *An option* is a contract between two parties – a buyer and a seller – that gives the buyer the right, but not the obligation, to purchase or sell something at a later date at a price agreed upon today (Chance, Brooks, 2009). A held option is a contract, rather than an obligation, and contracts for American options are the most popular and widely used as they allow the implementation of the option contract at any time before maturity. The other form is the European option, implemented only upon the expiration date. Both types, however, can be used internationally.

• *Forward contracts* comprise 'the commitment or arrangement between two parties, the seller and the buyer, to buy or sell something at a specified date in the future at a price agreed upon today' (Chance, Brooks, 2009). Alternatively, they can be defined as the 'contractual obligation, typically to buy or sell at a specific asset price and a specific date in the future' (D'Arcy, Brogan, 2001). The features of derivative financial instruments – one of the most important tools employed in financial markets – is that they are able and are most likely employed to achieve a hedge or protection, thus avoiding speculation in relation to gains and losses by waiting for the date of the execution of the contract (Liebenberg, Hoyt, 2003). Moreover, the motivation to engage in forward contracts is to gain financial leverage, which requires the use of a simple initial determination of profit margins.

• *A futures contract* is 'a contract between two parties – a buyer and a seller – to buy or sell something at a future date at a price agreed upon today, the so-called execution price' (Chance, Brooks, 2009), and in principle, is similar to a forward contract, i.e., is relates to the future. The main difference between them is the fact that futures contracts are typically not traded on the regulated market, but on the black market (through people's knowledge of each other).

• *Trade-offs,* otherwise known as swaps, constitute 'a contract between the parties that includes the approval of the exchange of cash flows' (Chance, Brooks, 2009), i.e., that the exchange or the exchange contract is for the purpose of implementation in the future. This type of contract is often used in hedging activities or the protection of risk, particularly when interest rates and foreign exchange rates change, or for the purpose of reducing the cost of borrowing through the process of arbitrage.

Securitization is an important tool in risk management and can be considered the bonding of important

innovations to attract new resources to businesses and reduce the likelihood of exposure to risk. The transfer of assets is liquid in that for the exchange they can be turned into securities and the bonds made liquid (Edmans, Goldstein, Jiang, 2012). Securitization is therefore the transfer of assets to shift risk from a business's balance sheet. In addition, securitization is the inventory and assembly of a group of similar assets and the establishment of bonds for these assets and the sale of these in the market. Through securitization, businesses can diversify credit risk, which can be exposed, and part can be transferred to others. This reduces the need for follow-up payments and can harmonize the maturities of assets and liabilities by investing in a broad base of available bonds, which will reduce the effects of risks.

Loan sales. In this process of buying and selling loans, there may or may not be a repurchase, in which case the loans are not removed from the balance sheet, but are also not the cause of any public indebtedness because the loan finally expires. There are two types of contracts for the sale of loans or mechanisms by which loans could transfer credit between the seller and the buyer: two posts and the transfer of ownership. Businesses sell loans to manage their financial risk in the optimal manner, the loan sale process removes assets (and the risk of credit) from the balance sheet, and further it allows the business to achieve greater diversity of assets.

*Financial leasing*has a positive impact on financial ratios of the lessee in its standard state, which looks good as long as the lessee ensures the availability of cash flows to meet short-term obligations. Moreover, there are various forms of leasing, most of which facilitate the risk management process, namely: i) sale and lease back; ii) funding through sale; iii) leveraged leasing (or lift rental).

4.7 Disclosure of Hedge Accounting

Recently, the IASB has amended accounting for financial instruments under IFRS 9 to introduce a new hedge accounting model, together with corresponding disclosures concerning risk management activity for those applying hedge accounting. The changes to hedge accounting and the associated disclosures were developed in response to concerns raised by preparers of financial statements in relation to the difficulty of reflecting risk management activities appropriately in the financial statements. Under the amendments, information on all hedges must be provided in a single location in the Notes to the Financial Statements. Currently, information on hedge accounting concern the type of hedge, established by accounting standards, such as cash flow and fair-value hedges.

5. Discussion

Financial risk management is a dynamic process which involves taking all appropriate steps to identify the risks affecting the objectives of the enterprise and address them. It is acknowledge that risk exists and affects the existence of businesses, and that many of these risks are generated in ways that may be unexpected and could have a major impact on important aspects of the enterprise. Thus, businesses need to understand the risks they are facing and determine the amount of risk they are willing to bear before deciding to take any decision. Businesses vary in their perception of risks that may be encountered or to which they are exposed and must determine which risks are to be borne by the company and which risks are not incurred in the pursuit of its objectives.

Hedge accounting is one of the most important strategies employed by businesses to manage risk or to overcome or mitigate risks; this results from a natural inclination to avoid risks as far as possible. The use of hedging accounting has allowed businesses to reduce their financial risk. However, this is based on the notion, essential in hedge accounting, that the process of hedging is risk specific, i.e., the process employed relates to a specific type of risk and not financial risk in general. Nonetheless, it is possible to use one tool for a certain number of specific risks individually. At the same time hedging is not free; corporations must use their resources to undertake hedging activity. In order to add value through hedging, the result must not only shift the mean of the distribution to the right, but must also do so net of costs given the expenses related to hedging activities. Thus, it is important to recognize that the purpose of hedging is to reduce exposure and not to try to beat the market in order to make the profit. Hence, any hedging strategy should be designed to balance the economic effectiveness of the hedge with the cost of the hedge.

There are limitations to hedge accounting. Hedge accounting comprises many disparate tools, and their applicability varies depending on the risk. Furthermore, each has its own parameters. For example, the use of financial derivatives requires the existence of private markets with which to deal, as well as an awareness and understanding on the part of businesses of how to use them and how they operate. As the use of derivatives is relatively new, it takes a considerable amount of time to understand their use and to apply them, as well as to determine the level of protection afforded. The use of financial derivatives in hedging can itself be risky, and could threaten the interests of businesses and objectives in the long run; used improperly, they could result in the failure of the business to honor debts or in financial difficulty. However, when used properly, derivatives can increase the wealth of shareholders and investors by providing the means of controlling risk and cash flow to a greater extent. The same can be said of the other tools of hedge accounting, such as securitization and loan sales, which are difficult to apply with insufficient understanding and can result in the opposite outcome to that desired.

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